# Rakesh Mohan: Central banks and risk management – pursuing financial stability

Address by Dr Rakesh Mohan, Deputy Governor of the Reserve Bank of India, at the 4th Annual Conference on Cash, Treasury and Risk Management in India, New Delhi, 21 November 2006.

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I have chosen to speak on "Financial Stability" for a number of reasons. Although financial stability has always been of concern to central banks, it is a relatively new concept in terms of the widespread attention being given to it in recent years. I thought it would be useful to discuss why it has become so important to central banks. Achieving this understanding would also help in explaining some of the behaviour of central banks. I will also try to explain why it is important for us.

## Financial stability - what is it?

What is financial stability? Despite widespread usage of the term, there is no widespread agreement on a useful working definition of the term. Some define financial stability in terms of what it is not – the absence of financial instability. Others take a more macro-prudential view and specify financial stability in terms of limitation of risks of significant real output losses in the presence of episodes of system wide financial distress.

In the absence of a widely accepted definition it is useful to discuss what we expect a financial system to do.

The primary function of the financial system is to smoothly and efficiently facilitate inter-temporal allocation of resources from savers to the ultimate users. This process of intermediation of funds enables the utilisation of available resources to their most productive uses. Such a process implies management of financial risk on an inter-temporal basis. In doing so however, the financial system is expected to absorb real economic surprises and shocks. If for some reason this is not done well, it could impair the efficient functioning of the financial system as a whole and engender financial instability.

But we need to be careful in thinking about financial instability. Disturbances in financial markets or at individual financial institutions need not constitute financial instability if they do not impair overall economic functioning. Illustratively, a closure of a small financial institution, or for that matter, movement in asset prices within certain limits or even minor corrections in financial markets need not necessarily hamper stability. On the contrary, fluctuations in asset and other prices in financial markets may actually be good for overall financial stability as adjustment mechanisms. Such market adjustments also help to keep authorities alert and sensitive to incipient developments and can enable them to identify and monitor newer risks. What are important from the macroeconomic standpoint are issues related to contagion and systemic risk, which can lead to economy-wide upheavals and would, therefore, need to be monitored on an on-going basis.

The point of making these observations is that unlike price stability, which can be easily quantified, financial stability cannot be easily summarised into a single measure. As a consequence, monitoring financial stability needs to encompass not only financial institutions and markets, but also the state of financial infrastructure: a stable financial system depends as much on the health of financial institutions as it does on the complex inter-linkages between those institutions and the interplay between the financial system, the financial markets and the associated financial infrastructure. The integrity of the payment system is at the core of the financial system, and confidence in the use of money as a unit of account is essential to maintenance of financial stability. While central bankers have always been concerned with addressing these aforesaid aspects, the issue therefore remains: why is there an overt concern with financial stability in modern-day financial systems?

## Historical background

To understand the current outbreak of concerns, let us review a little bit of history. It would be useful to start of with salient developments in the world economy since the early 1900s in order to understand the relevance of financial stability in modern day financial systems.

Until World War I, the international experience had broadly been of long run price and monetary stability. A great degree of turbulence followed after the conclusion of World War I: the German hyper-inflation, the Great Depression, World War II itself, the Korean war, and later the Vietnam war. It is not surprising that in the presence of such economic and political dislocation, price and financial stability also suffered during this period. The financing of wars led to fiscal expansionism usually financed by money creation. Thus a period of relatively high inflation ensued in the 1960s and 1970s, culminating in double digit inflation in the US and Western Europe in the late 1970s, spiked by severe oil shocks of the 1970s. Thus, after this long tumultuous period of fluctuating inflation during the 1960s and 1970s, aggressive disinflationary policies of the early 1980s brought international inflation down to tolerable levels.

Prior to World War I, the gold standard was, in some sense, the anchor of monetary, price and financial stability. Central Banks' commitment to ensuring the convertibility of their currency into gold at fixed prices did much to engender confidence in the system. There was also a significant degree of cooperation among the central banks and governments of major economies, which helped to lubricate the system in its functions in times of financial imbalances (Eichengreen, 1992). The gold standard, however, came under severe strain after World War I in the wake of the breakdown in cooperation between countries. The consequence was the depression, competitive devaluations, beggar thy neighbour policies, decline in world trade and high unemployment, at different times in different countries during the inter war period. Overall, there was a great degree of instability during this period.

The quest for a new international economic order that would restore economic and financial stability in the world gave rise to the Bretton Woods institutions and the Bretton Woods Currency System. It was not until 1958 that most European currencies became convertible and many currency adjustments took place after the end of World War II. The anchor now was essentially the US dollar as the reserve currency and the commitment to its convertibility to gold. The International Monetary Fund was to act as the lender of last resort in case of balance of payment crises. But even this fixed exchange rate system lasted only till 1971. The over-financing of exports, the economic pick up in hitherto war torn countries led to the glut of the dollar; and the American inflation of the 1960s; all contributed to the cessation of dollar convertibility to gold. The fixed exchange rate system got abandoned after the Smithsonian agreement. The floating exchange rates that then followed meant that the world was left without an easily understood, credible monetary anchor. Hence the increasing quest for methodologies promoting financial stability.

The other major feature of global financial markets has been the trends in capital flows. A major surge in capital flows started around the 1870s and continued till World War I. This era, which coincided with the operation of the gold standard, has been regarded until recently as the golden era of capital mobility. Open trade and open labour markets also characterized this period. In retrospect, there was an effective system shut down after World War I, almost until the 1970s. During the inter war period, the world economic system got characterized by increasing trade restrictions, high tariffs, curbs on capital flows, fixed exchange rates and other rigidities. Post World War II it has taken a long time to open up international trade through the Successive GATT Rounds and now through the WTO.

The period after 1973 has been characterized by floating exchange rates and gradually increasing international capital flows, along with increasing volumes of international trade. The geographical demarcation of national borders gradually became less of a constraint for both trade and capital flows. By the 1990s, open trade and open capital accounts led to a phenomenal growth cross border flows, including to developing countries and the emerging economies in Eastern Europe.

All this entailed a phenomenal expansion of financial activity. This was partly in response to the demographically-driven increase in the amount of investible wealth, but also reflected the increased need for markets and institutions to channel funds between an increasingly active and diverse range of borrowers and lenders.

At the same time, domestic financial liberalization led to the removal of constraints on the activities of financial institutions of different kinds within a given national market in many countries. The liberalization of cross-border capital movements and rights of market access meant that a broader range of domestic and foreign institutions were able to provide banking and other financial services in a given market. The range of services on offer also expanded; and an increasing number of both markets and institutions became active across national boundaries. While this entailed lower costs of products and services for consumers, this also entailed the possibility of contagion with ramifications extending well beyond national borders particularly in the context of inadequate development of financial markets in some countries.

On the flip side, however, this transformation of the financial marketplace extended and tightened linkages across markets and institutions, increasing the uniformity of the information sets available to economic agents and encouraging greater similarity in the assessment of information, driven to a large extent by advances in information technology and communications networking. This, in effect, meant that weaknesses in the financial system could engender serious and far more disruptive economic consequences than was previously the case, and could increasingly engender contagion effects extending well beyond national boundaries. The Mexican crisis of 1994-95, the East Asian crises of 1997-98 and the more recent crises in Argentina and Turkey are ample testimony to this fact. At the national level, the banking crises in Nordic countries in the 1980s and 1990s, the problems in the Philippines and Korean banking systems in the 1990s (and the near panic at the time of the LTCM affair), and the financial bubble in Japan whose costs are felt even at present, deserve mention.

During the 1980s and 1990s, nearly one hundred national banking systems collapsed, many more than in any comparable previous period. The range of movements in exchange rates and the extent of deviations in market exchange rates from real exchange rates – the magnitude of undershooting and overshooting – were larger than in any previous period. There were also massive asset price bubbles in some countries: Japan, Sweden, Thailand, South East Asian Countries like, Malaysia and finally in the United States.

All this meant that the sources of crises, which were earlier traced primarily to weaknesses in banking systems, became manifold, and could emanate from any segment of the financial sector with possibilities of spillovers to other sectors and countries. More importantly, as the Asian crises amply demonstrated, such crises could even affect economies with sound real sector fundamentals. The deficiencies in the international financial architecture meant that the IMF was no longer large enough to take care of the crises. The earlier concerns on banking stability therefore become much larger in scope and content, to assume the term ‘financial stability’.

These developments have had several consequences for the institutional and systemic structure. Among the most important of these from the point of view of systemic significance has been disintermediation. Credit-worthy firms are relying increasingly on capital markets, rather than bank loans, to finance investment projects. This has led to the deepening of capital markets of various kinds, as well as to a more important role for the institutions that deal in traded securities.

A second important structural change is the emergence of markets for risks of different kinds, in which exposures to specific market or credit risk can be bought and sold separately from financial assets. This has provided economic agents the leeway to reduce or increase their exposure to specific categories of risk.

A third key trend has been changes in the business profile of financial institutions. In many countries, services traditionally associated with "banking" are now offered by institutions not legally characterized as banks, while banks are increasingly engaged in para-banking activities.

These fundamental changes – deregulation, liberalization and disintermediation – have, not surprisingly, made financial systems far more interconnected, with possible ramifications for contagion in the event of an exigency in any country. As a consequence, central banks, which were traditionally focused on monetary and banking stability, have increasingly come to focus on financial stability as a key concern in the conduct of monetary policy.

**How are central banks responding to this development?**

Avoiding crises becomes ultimately a national responsibility. The impact of instability in times of crisis typically tends to be borne by domestic taxpayers rather than the global private entities. The burden of such an asymmetric adjustment means that there is a need to institute domestic mechanisms that could focus on the aspect of financial stability on an on-going basis. As institutions traditionally mandated with the task of price stability, central banks became the natural choice for Governments to be entrusted with oversight of financial stability.

Given that financial stability has become a paramount focus of central banks, the key question therefore arises is: how are central banks responding to the challenge? Interestingly, new legislations explicitly provide mandates for financial stability; illustratively, Hungary passed such legislation in 2001, the Netherlands in 1993, Spain in 1994 and the UK in 1997.

So, the question is why have the central banks become interested in financial stability? Central banks are clearly responsible for issue of currency, maintaining its value as a means of exchange and unit of account. They are also responsible for maintaining the efficiency and integrity of payment systems. Ultimately, they are the lenders of last resort. Notwithstanding the complexity involved, evidence suggests that involvement in financial stability can be broadly categorised into five types of activities. Being a key fulcrum of the policy apparatus responsible for financial stability, central banks might be involved in several of these tasks.

First, *oversight of the financial infrastructure*: This involves the operation as well as oversight of the payments and settlement systems and securities clearing system. It might also involve oversight of financial disclosures, market conduct and the like. It is important to note that all at the markets need the payment system, including the capital market.

Second, *regulation and supervision of financial entities*: This involves the formulation of prudential guidelines (capital adequacy and reserve requirements, provisioning norms, risk management standards), the monitoring of compliance with those rules (on-site inspection and off-site surveillance) and the imposition of sanctions in case of non-compliance.

Third, *safety net provisions*: This involves decisions to restructure troubled banks as well as 'honest brokering'. It also involves the operation of financial safety net in the form of deposit insurance.

Fourth, *Liquidity*: The response to a crisis may necessitate judicious use of the emergency liquidity assistance facilities in order to avoid disruptions from disorderly failures and to contain contagious strain. Only central banks can inject liquidity.

Fifth, *market surveillance*: central banks are often involved in the regulation and surveillance of markets. The three markets that are primarily the focus of surveillance by central banks are the money, bond and foreign exchange markets.

In addition, central banks are typically concerned with *macro financial stability*. This encompasses monitoring the behaviour of all important players in the financial sector, the health of non-financial sector balance sheets as well as assessment of systemic vulnerabilities. This analysis is accompanied by communication policy on financial stability issues, either through dedicated financial stability reports or disclosure of information on financial stability as part of regular reports (Annex 1). The basic motive behind such reports is to communicate to the markets and the public at large and thereby express the commitment of the central bank for achieving its objectives. This is accompanied by a process of structured communication among the various bodies involved in the pursuit of financial stability.

In their quest for financial stability, central banks worldwide have exhibited a variety of responses. On the one hand, several central banks have been given an explicit mandate to promote financial stability (Annex 2). Another broad category of response has been the constitution of independent departments to oversee financial stability. Illustratively, at the Reserve Bank of New Zealand, the supervisory and financial market departments were merged into a Financial Stability Department. At the ECB, the area concerned with financial stability matters (Prudential Supervision Division) was upgraded to a Directorate (Financial Stability and Supervision), which reports to a member of the Executive Board, and plays a coordination role for euro area/ EU financial stability monitoring. Finally, the Bank of England has also constituted a dedicated Financial Stability Department for oversight of financial stability matters, headed by a Deputy Governor. The transfer of supervisory responsibilities outside the central bank in several countries has also led central banks to focus their attention on systemic issues as reflected in a reorientation of organisational arrangements.

The crux of these observations is that financial stability has been a prime locus of change in central banks and increasingly, central banks are taking a pro-active stance to address the threats posed by financial instability. For instance, the *Financial Stability Forum*, for instance, was created in the aftermath of the Asian financial crisis, comprising members as major countries, international financial institutions such as BIS and IMF and the international standard setters such as International Organisation of Securities Commissions (IOSCO) and International Association of Insurance Supervisors (IAIS).

Having traced the broad contours of the growing importance of financial stability worldwide and the role played by central banks in the process, let me turn to how the Reserve Bank has been responding to the challenge.

## Indian experience on financial stability – an overview

Till the onset of reforms in the early 1990s, India was a relatively closed economy, being largely insulated from the vicissitudes of global markets. It was not, of course, totally insulated from exogenous shocks. The severe drought of 1965 to 1967, the oil shocks of 1973, 1979 and 1989, and wars all had significant effects including the emergence of external payments crises. However, the financial system was effectively controlled, particularly in the 1970s and 1980s and the risk of financial contagion was therefore not high.

The gradual opening up of the economy since the 1990s raised several important challenges for central bankers. The opening of the external sector meant that developments in India came to be increasingly influenced by developments abroad. It is interesting to look at some numbers. Contrary to various perceptions, the Indian economy is now substantively open. As the Finance Minister observed in a lecture at Yale University, whereas India's GDP in 2004-05 was roughly US $700 billion, the gross flows on the current account and the capital account, put together, came to US $500 billion. This is despite the fact that trade tariffs are still higher than in most other countries in the world, and that capital account controls still exist. The large capital inflows, despite the cautious approach to liberalization, meant that such flows can engender volatility in exchange rate movements. The speed of capital flows, both inward and outward, is much higher than current account flows and can therefore destabilize the exchange rate, and operation of financial and capital markets, possibly in response to external events unconnected with the domestic economy (Jalan, 2003). Consequently we have to be concerned with exchange rate instability, as distinguished from mere fluctuation, for its potential to affect other markets, both goods and capital markets. Exchange rate instability arising from external events can give rise to domestic instability in the operation of the stock market, government securities markets, and the money markets, along with their attendant effects. For emerging economies such as India, it therefore becomes necessary to institute special defenses for ensuring financial stability. Furthermore, with the interest rate emerging as a key channel of monetary policy signals, the efficacy of monetary transmission is predicated on the health of the financial sector. The gradual liberalization of the financial sector has also witnessed the emergence of conglomerates, with attendant systemic implications.

More broadly however, the period since the 1990s has been testimony to several shocks impinging on the economy. Illustratively, nuclear sanctions and the border tensions in the late 1990s, the monsoon vagaries in the recent past, most recently in 2003, the crises in East Asia in 1997 and 1998, the upheaval in domestic stock markets in May 2004 coupled with the recurrent oil price fluctuations, has meant that the economy has been susceptible to intermittent shocks. And unlike the shocks of earlier decades, the economy has been able to withstand these disruptions with limited impact on the financial sector. The role of central banks in such a milieu is not hard to foresee. The response of the Reserve Bank in May, 2004 is a case in point. Judged thus, the role of Reserve Bank in its task of monitoring financial stability can hardly be over-emphasized.

Financial stability has, therefore, emerged as a key consideration in the conduct of monetary policy. In this process, the Reserve Bank has adopted a two-track approach in the pursuit of financial stability. First, by ensuring monetary stability through lowering of inflation, it has lowered inflationary expectations, thereby fostering financial stability. Second, the Reserve Bank has adopted a multi-pronged strategy, with suitable country-specific adaptations, to promote stability of financial institutions, financial markets and the financial infrastructure. The stable economic regime combined with the macro financial oversight of the financial system has imparted confidence to market players to conduct their business in an orderly manner.

In general, it is possible to discern two broad sets of instruments by which the Reserve Bank has been addressing the financial stability concerns: preventive instruments, comprising micro and macro prudential measure and reactive instruments, comprising liquidity support measures and public intervention tools aimed at safeguarding depositors' interests.

With regard to *institutions*, the Reserve Bank founded the Board of Financial Supervision in 1994 to upgrade its practice of financial supervision. A set of prudential norms for the commercial banking sector had been instituted as early as 1994 with regard to capital adequacy, income recognition and asset classification (IRAC), provisioning, exposure norms and more recently, in respect of their investment portfolio. The approach adopted here was one of gradual convergence with international best practices, while internalizing it to suit country-specific requirements. In tandem with the gradual opening up of the economy, the regulatory and supervisory framework was spruced up comprising of a three-pronged strategy of regular on-site inspections, technology-driven off-site surveillance and extensive use of external auditors. As a result of improvements in the regulatory and supervisory framework, the degree of compliance with the Basel *Core Principles* has gradually improved. The supervisory framework has been further upgraded with the institution of a framework of Risk-based Supervision (RBS) for intensified monitoring of vulnerabilities. A scheme of Prompt Corrective Action (PCA) was effected in December 2002 to undertake mandatory and discretionary intervention against troubled banks based on well-defined financial/prudential parameters. In view of the growing emergence of financial conglomerates and the possibility of systemic risks arising therefrom, a system of consolidated accounting has been instituted. A half-yearly review based on financial soundness indicators is being undertaken to assess the health of individual institutions and macro-prudential indicators associated with financial system soundness. The findings arising thereof are disseminated to the public through its various Reports. In fact, in 2003 that the Reserve Bank published a chapter titled 'Financial Stability' in its Report *on Currency and Finance* in that year, highlighting its challenges and problems in the pursuit of stability. Subsequently, with effect from 2004, the annual statutory Report of Trend and Progress of Banking in India has began to publish a dedicated chapter on financial stability. This is in addition to the Monetary and Credit Policy Review where the Governor highlights the threats and challenges to the financial environment before announcing policy measures.

Given the multi-faceted nature of financial stability, no one body might be in a position to monitor it in its entirety. Keeping this in view, the Ministry of Finance has constituted a High-Level Coordination Committee on Financial and Capital Markets with the Governor, RBI, Chairman, Securities and Exchange Board of India (SEBI) and Chairman, Insurance Regulatory and Development Authority (IRDA) along with the Finance Secretary, Government of India as members to address policy gaps and overlaps.

An important aspect of the financial stability process has been the growing emphasis on the role of market discipline. As part of the process, the Reserve Bank has laid strong emphasis on the levels of transparency and standards of disclosure in banks' balance sheets. These disclosures, presently supplemented as 'Notes on Accounts' not only encompasses prudential ratio pertaining to capital adequacy (tier-I and tier-II separately) ratio, non-performing loans, exposure to sensitive sectors (capital market, real estate and commodities), but also financial ratios such as interest and non-interest income as percentage of working funds, return on average assets and net profit per employee. These disclosures have been gradually expanded over time and presently include maturity pattern of assets and liabilities (both Rupee and FC), movements in non-performing loans, issuer composition of non-SLR investment, assets subject to corporate debt restructuring as well as details of assets sold to Securitisation / Reconstruction company.

You would also appreciate that the performance of the non-financial sector has an important bearing on financial stability. Keeping this in view, the Reserve Bank has also been closely monitoring the stability ratios of the non-financial sector. In the corporate sector for instance, the reduction in debt liabilities following corporate restructuring and reduced interest expenses in an environment of low interest rates has improved the financial stability indicators in manufacturing. Available indications are that both consumption and investment demand are currently buoyant. Business surveys also point to high levels of both business confidence and capacity utilisation. The improved investment sentiment and business confidence, as reflected in the increasing number of firms incurring capital expenditure, suggests the prospects for buoyant manufacturing growth in 2005-06.

You would all be aware that issues of governance in banks has assumed relevance worldwide in the wake of accounting irregularities in the US and elsewhere. Problems in governance can derail even the best efforts on the part of regulators to ensure financial stability. To address this aspect, the Reserve Bank issued guidelines on ownership and governance based on well-defined principles, *viz.*, a well-diversified ownership and control; important shareholders being 'fit and proper'; directors and CEO being 'fit and proper' and observation of sound corporate governance principles.

An important hallmark of the pursuit of financial stability in India has been the adoption of a consultative approach to policy formulation, taking on board the various stakeholders in the financial system. Such an approach has had the merit of providing useful lead time to market participants to adjust their behavior in conformity to the regulatory guidelines.

Evidence suggests that no two crises are exactly alike. As a result, in addition to preventative instruments just discussed, the Reserve Bank had also resorted to reactive instruments.

One such instrument is *emergency liquidity support*. Thus, in very rate and unusual circumstances, when a bank faces a sudden and unforeseen liquidity problem, the Reserve Bank has, on an earlier occasion, at its discretion, extended liquidity support to the bank.

A second such instrument is the *provision of safety net* in the form of deposit insurance (DI). In India, DI is mandatory and covers all banks (commercial / cooperative / RRBs / LABs). All deposits except (a) deposits of foreign governments, (b) deposits of Central/State governments, (c) inter-bank deposits and (d) deposits held abroad are covered by DICGC. The amount of coverage is presently Rs.1 lakh (Rs.100,000), and is provided to deposits held in the same right and in the same capacity. Given the present limit, as much as 95 per cent of deposit accounts and 66 per cent of assessable deposits are fully protected. Given the level of per capita GDP at constant prices (Rs.15017 in 2004), this implies that the coverage limit is roughly 6 times the per capita GDP (Annex 3). The premium is charged on a flat rate basis, which is presently 8 paise per Rs.100 of assessable deposits for the year 2004-05 and 10 paise from 2005-06 (earlier it was 5 paise per Rs.100 of assessable deposits).

A third instrument is *treatment of insolvent banks* (winding down). The Reserve Bank, rather than closing them down, has shown a preference for merging such banks with healthy banks. The rationale behind such an approach has been dictated by two considerations. First, given the dominance of commercial banks, their closure can raise systemic concerns. Second, given that a significant portion of bank depositors in India are small, it is imperative to safeguard their interests, while dealing with insolvent banks (Mohan, 2004).

The second broad element of strategy has been the development of financial markets. Ensuring orderly conditions in *financial markets* has been an important component of the Reserve Bank's approach towards financial stability. The cornerstone of the process has been to widen, deepen and integrate various segments of financial markets to enable the price discovery process, lower transactions costs and enhance market liquidity. Accordingly, the operating procedures of monetary policy have been continuously fine-tuned to attune it to the realities of market dynamics.

In the *money market*, the focus has been on developing a deep and liquid money market, supplanted by a wide array of instruments to modulate monetary conditions with a relative emphasis on indirect policy instruments to enable swift responses to changing market conditions. In the face of large capital flows, a new facility in the form of Market Stabilisation Scheme (MSS) was instituted in April 2004. The MSS essentially seeks to differentiate the liquidity absorption of a more enduring nature by way of sterilisation from the day-to-day normal liquidity management operations.

In the *foreign exchange market*, the exchange rate policy adopted by India has been one of managing volatility with no fixed target, while allowing the underlying demand and supply conditions to determine the exchange rate movements over a period in an orderly way. Market players are also enabled to manage risk through various designated hedging instruments. Prudent management of the external sector coupled with a calibrated approach to capital account liberalization has been an important component of macroeconomic policy to ensure financial stability.

In the *government bond market*, the major objectives of reforms were to impart liquidity and depth to the market by broadening the investor base and ensuring market-clearing interest rate mechanism. The important initiatives introduced included a market-related government borrowing and consequently, a phased elimination of automatic monetisation of Central Government budget deficits. This, in turn, enabled the shift from direct to indirect tools of monetary regulation - activating open market operations and the development of secondary market. The entire range of changes necessitated developments in (a) instruments, (b) institutions and (c) technology, along with concomitant improvements in (d) transparency and (e) the legal framework. As of April 1, 2006 the FRBM Act now prohibits the Reserve Bank from subscribing to government securities in the primary market. This has necessitated the further development of techniques and instruments to ensure stability in the G-securities market.

Developing a robust and secure *financial infrastructure* has been a key component of financial stability. Towards this end, the Reserve Bank undertook several initiatives to upgrade the payment and settlement system in the country. Salient among these included Electronic Clearing Service, Electronic Funds Transfer, establishment of a secured private network which serves as a private gateway to the financial system. Based on the framework prevalent in developed financial markets, a Real Time Gross Settlement (RTGS) system has been operationalised. The RTGS provides for an electronic-based settlement of inter-bank and customer-based transactions with intra-day collateralised liquidity support from the Reserve Bank. Side by side, in its quest for benchmarking with international best practices, the Reserve Bank has benchmarked its conformity with the *Core Principles for Systematically Important Payment System (CPSS)*. The degree of compliance with these *Principles* is presently on par with those prevailing internationally.

## Challenges to financial stability

Given the inherent dynamic nature of financial stability, its operationalization raises several challenges.

First, the changing structure of the financial system with the blurring of boundaries between financial institutions and markets raises significant policy challenges. As I remarked earlier, services traditionally associated with ‘banking’ are presently being offered by institutions not legally characterized as banks, while banks are increasingly engaged in para-banking activities. Such ‘conglomerisation’ of financial activity raises the possibility of systemic risk with attendant implications for financial contagion, which lies at the very root of financial instability.

Second, in this context coordination between the regulators assumes paramount importance. In recognition of these concerns, the Reserve Bank has taken a structured approach to their surveillance by instituting a coordinated monitoring mechanism with other domestic regulators (SEBI and IRDA) on matters of supervision of financial conglomerates. In addition, the Reserve Bank has been holding half-yearly discussions with the Chief Executive Officers of the conglomerate in association with other principal regulators to address outstanding issues and supervisory concerns. This process is working well at present. However, as financial development takes place in India we can expect further blurring of distinction between different types of financial intermediaries. We can also expect greater presence of large financial conglomerates, including foreign ones. Hence, we need to consider the development of a more organized approach to the regulation and oversight of the emerging financial conglomerates as has been done in other countries. In the United States, for example, the Federal Reserve Board has been designed as the lead umbrella supervisor of financial holding companies (FHCs). Pending such developments, as a workable measure, there could be need to execute general/specific memoranda of understanding (MoU) as part of the process of supervisory co-ordination towards furtherance of financial stability.

Third, another significant feature of the Indian economy post-reforms has been the greater opening up of the economy. The size of merchandise, as well as services trade, has been increasing steadily in recent years, reflecting greater integration of the economy with the rest of the world. The recent experience also suggests subtle shifts in international comparative advantage with software, business and commercial services gaining prominence. Overall capital flows have also been buoyant, given the positive outlook on the economy. The large capital flows have, in turn, resulted in accumulation of reserves, rendering the reserve position comfortable according to various indicators of reserve adequacy. While these developments have resulted in benefits, it has also made the economy much less quarantined from global developments and the task of central bankers that much more difficult than in the erstwhile autarkic regime. As a result, central bankers have to be continuously alert and watchful not only to domestic but also global developments because, as the Asian crises testifies, developments abroad can have significant domestic ramifications even for an economy with perfectly sound fundamentals.

Fourth, the spread of the financial system with growing liberalization of the economy and the increasing reach of formal finance has gradually expanded to cover larger segments of the population. The 'demographic dividend' of a larger and younger labour force has meant that banks have been able to expand their loan portfolio quite rapidly, enabling consumers to satisfy their lifestyle aspirations as a relatively young age with an optimal combination of equity and debt to finance consumption and asset creation. On the other side, such opening up has also meant that interest rates have become a much more potent tool of monetary policy, affecting consumption and investment decisions of the population in a fashion much more rapidly than was the case earlier. With a sizeable proportion of the population having limited ability to insure themselves against unforeseen contingencies, there is merit in considering the need to devise ‘shock absorbers’ in order to insulate the economy from contagion effects. Continuous and pro-active efforts towards developing a robust financial system and instituting appropriate market surveillance mechanisms that can throw up 'early warning signals' of financial distress are important parameters of such resilience.

The fifth challenge to the maintenance of financial stability lies in the increasing growth of the economy. The traditional measure of national accounting does not take cognizance of the knowledge flows that create value in the medium to long run. This phenomenal growth of the knowledge economy and its value-enhancing effect are only recently being addressed for the US economy. Judged from this standpoint, it seems that central banks would not only need to keep track of traditional measures of consumption and investment, but in addition, have a hang of the knowledge flows across borders in order to assess the impact of its decisions on the real economy. This is easier said than done and moving ahead from the traditional accounting framework to a more 'realistic' one incorporating 'knowledge flows' is a challenging task that central bankers will have to deal with sometime sooner than later.

Another challenge relates to the issue of coordination policy-making bodies. Instabilities can arise in any segment of the financial system and not necessarily in segments which are under the domain of the Reserve Bank, although through contagion effects, their effects are likely to be felt across the entire financial sector. This calls for closer and continuous coordination among the various policy-making bodies, including an even broader set of players such as accounting standard setters, legislators and tax authorities. The multiplicity of policy actors emphasizes the need for a cooperative organization of policy efforts in this regard.

The opening of trade has meant the death of commodity inflation. The expectations of financial market participants on financial variables are different from the market expectations of commodity prices. The recent surge in the stock market is likely to engender the 'wealth effect', which through multiplier process, is likely to spillover into prices and more particularly, into asset prices. Although such a phenomenon is widely acknowledged, attempting to precisely quantify the spillover from commodity to asset prices and the magnitude of such over-extension remains a challenge. There is a need in this context for serious analytical work that can explore the link in the movements between commodity prices and asset prices.

## Concluding thoughts

Over the last few years, the global financial system has been buffeted by a number of pressures and some unprecedented shocks. Nonetheless, the system has continued to prove resilient and financial stability has been maintained. Potential fault lines that have emerged in the process, viz., those pertaining to corporate governance, auditing and accounting standards and prudential norms have been receiving close scrutiny from policy makers.

The Indian financial system is not quarantined from global developments, but our judgment is that it remains robust, underpinned by the continued expansion of the Indian economy. The task for all of us is therefore to remain alert and proactive, identify and address newer risks, eschew harmful incentives and adjust the regulatory environment to address any unforeseen contingency in the economic environment.

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## Annex 1: Financial Stability Reports published by central banks

| Central bank / Monetary authority | Name of periodical | Frequency of publication | Languages |
|---|---|---|---|
| Dedicated financial stability reports | | | |
| Australia | Financial Stability Review | Bi-annual | English |
| Austria | Financial Stability Report | Once/twice a year | English, German |
| Belgium | Financial Stability Review | Annual | English (excerpts in Dutch and French) |
| Brazil | Financial Stability Review | Bi-annual | English, Portuguese |
| Canada | Financial System Review | Bi-annual | English, French |
| France | Financial Stability Review | Bi-annual | English, French |
| Hungary | Report on Financial Stability | Bi-annual | English, Hungarian |
| Norway | Financial Stability Report | Bi-annual | English, Norwegian |
| Spain | Financial Stability Report | Bi-annual | English, Spanish |
| Sweden | Financial Stability Report | Bi-annual | English, Swedish |
| UK | Financial Stability Review | Bi-annual | English |
| Financial stability articles by other central banks | | | |
| European Central Bank | Financial stability and Supervision (section in Annual Report) | Annual | English, other EU languages |
| Germany | Report on the Stability of German Financial System (section in Bundesbank monthly report) | | English, German |
| Hong Kong SAR | Half-yearly Monetary and Financial Stability Report (section in Quarterly bulletin) | Bi-annual | English, Chinese |
| India | Reinforcing Financial stability (published as a Chapter of Report on Currency and Finance, 1999-2000)* | | English, Hindi |
| Netherlands | Financial Stability (section of Quarterly bulletin) | Quarterly | English, Dutch |

* A regular chapter titled Financial Stability has been introduced in the statutory Report on Trend and Progress of Banking in India from the year 2003-04

**Annex 2: Legal basis for financial stability function**

| Central bank | Legal basis for the financial stability function |
|---|---|
| Australia | The RBA Board should use its monetary and banking policy so as to best continue to (i) the stability of the currency, (ii) the maintenance of full employment and (iii) the economic prosperity and welfare of the people of Australia |
| Austria | Article 79 (I) of the Austrain Banking Act 1993 (as amended in 2001) observes 'observations and findings of a fundamental nature or of particular importance in the area of banking…' should be exchanged between the OeNB, the Financial Market Authority and the Federal Ministry of Finance. Moreover, Article 13(I) of the Financial Market Authority Law explicitly states that 'A Financial Market Committee shall be established at the Federal Ministry of Finance in order to promote the cooperation and exchange of opinions as a platform by the institutions jointly responsible for the stability of the financial markets'. |
| Belgium | The amended National Bank of Belgium Act 1988 (Article 8) states that 'the Bank contributes to the stability of the financial system'. |
| Canada | According to Section 19 (g.I) of the Bank of Canada Act, the Bank may purchase or sell a wider than normally allowable range of securities for the 'purpose of promoting the stability of the Canadian financial system'. |
| European Central Bank | "the primary objective of the ESCB shall be to maintain price stability. Without prejudice to the objective of price stability, it shall support the general economic policies in the Community with a view to contributing to the achievement of the objectives of the Community." "*the basic tasks to be carried out through the ECSB shall be….to promote the smooth operation of the payment systems.*" "The ECSB shall contribute to the smooth conduct of policies pursued by the competent authorities relating to the prudential supervision of credit institutions and the stability of the financial system |
| France | According to the Banking Act of 1984, the Governor of the Banque de France chairs the Commission Bancaire, which is responsible for the supervision of credit institutions and investment firms. |
| Germany | The German Banking Act stipulates that the supervisory authority 'shall counteract undesirable developments in the banking and financial sector which…involve serious disadvantages for the national economy'. |
| Hungary | The Central Banking Act of 2001 states: 'The NBB shall promote the stability of the financial system and shall contribute to the development and smooth conduct of policies related to the prudential supervision of the financial system' |
| Netherlands | The Bank Act 1998 (Section 3) states that 'in implementation of the (EU-) Treaty, the Bank shall, within the framework of the ESCB, contribute to the smooth conduct of policies pursued by the competent authorities relating to the prudential supervision of credit institutions and the stability of the financial system'. |
| Norway | Section I of the Norges Bank Act states that the Bank shall…'promote efficient payment system domestically as well as vis-à-vis other countries, and monitor developments in the money, credit and foreign exchange markets'. |
| Spain | The law that granted independence to the Banco de Espana (Law on Autonomy of the Banco de Espana 1994) includes as one of its objectives to promote financial stability. |
| Sweden | The Riksbank Act states that it is the mission of the Bank to promote a safe and efficient payment system |
| UK | The Bank was formally charged with the responsibility for the 'overall stability of the financial system as a whole' by the Chancellor in a letter to the Governor in May 1997 and subsequently in the Memorandum of Understanding between HM Treasury, the Bank of England and the FSA, published in October 1997 |

**Annex 3: Features of Deposit Insurance Scheme**

| Feature | India | European Union | US | World Average |
|---|---|---|---|---|
| Explicit | Yes | Yes | Yes | 68 countries |
| Coverage limit | US $ 2,288* | US $ 25,823** | US $ 1,00,000 | 3 times per capita GDP |
| Co-insurance | No | 10 per cent | No | 17 out of 68 countries |
| Coverage of foreign currency deposits | Yes | Can be excluded | Yes | 48 out of 68 countries |
| Coverage of inter-bank deposits | No | No | Yes | 18 out of 68 countries |
| Source of Funding | Joint (public *plus* private) | No regulated | Joint | Joint: 51<br>Private: 15<br>Public:1<br>Not available for 1 country |
| Administration | Public | Not regulated | Public | Joint: 24<br>Public: 33<br>Private: 11 |
| Membership | Compulsory | Compulsory | Compulsory | 55 out of 68 countries have compulsory membership |
| Premium levied (% of deposits) | 0.08 | Varies markedly | 0.00-0.27 | 58 countries regularly levy premium |
| Risk-adjusted premium | No | Not regulated | Yes | 31 out of 68 countries |

* US $ 1=Rs.43.7; ** US $ 1= Euro 0.7745